

Williams Lake Timber Supply Area

P u b l i c D i s c u s s i o n P a p e r

September 2001



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**BRITISH
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Ministry of Forests

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Introduction

The British Columbia Forest Service regularly reviews the timber supply* for all timber supply areas* (TSAs) and tree farm licences* (TFLs) in the province. The reviews examine the impacts of current forest management practices on the timber supply, economy, environment and social conditions of the local area and the province. Based on this review, the chief forester may, if necessary, adjust the allowable annual cut (AAC) for the Williams Lake TSA.

Inputs to the Timber Supply Review are:

- Information about current forest management practices, and economic, environmental and social factors

Outputs are:

- A new AAC for the next five years
- A list of the information to be improved for future timber supply forecasts

Executive Summary

In 1997, the AAC was set at 3.807 million cubic metres per year for the Williams Lake TSA. Since then the timber supply has been re-examined. The current analysis suggests that this level is reasonably stable except for a temporary harvest level of 850,000 cubic metres per year for salvaging the 1980's mountain pine beetle infestation*.

Before a new AAC is determined, the chief forester will review all the relevant information and public input. Your comments regarding the timber supply and economic information are encouraged before Oct. 23, 2001.

Timber Supply Review in the Williams Lake TSA

The *Williams Lake TSA Data Package* and *Information Report* were released for public review in August 1999. The documents were reviewed by licensees, the public and government agencies. The British Columbia Forest Service has now completed the *2001 Williams Lake TSA Analysis Report*, which is summarized in this discussion paper. This discussion paper is intended to provide British Columbians with an overview of the Timber Supply Review process and harvest level forecasts for the Williams Lake TSA, and to encourage them to provide comments during the 45-day public review period. Public comments will be accepted until **October 23, 2001**.

Table 1. Steps in the Timber Supply Review process

- 1) Information gathering, then release of data package and information report for public review
- 2) 30-day public review
- 3) Completion of analyses, then release of analysis report and public discussion paper for public review
- 4) 45-day public review - current status of the Williams Lake timber supply review
- 5) Release of chief forester's AAC rationale and summary of public input.

Before setting a new AAC, the chief forester will review relevant reports and public input. The chief forester's determination will be outlined in a rationale statement which, along with the summary of public input, will be available to the public upon release. Following the release of the AAC determination by the chief forester, the minister of forests will apportion the AAC to the various licences and programs.

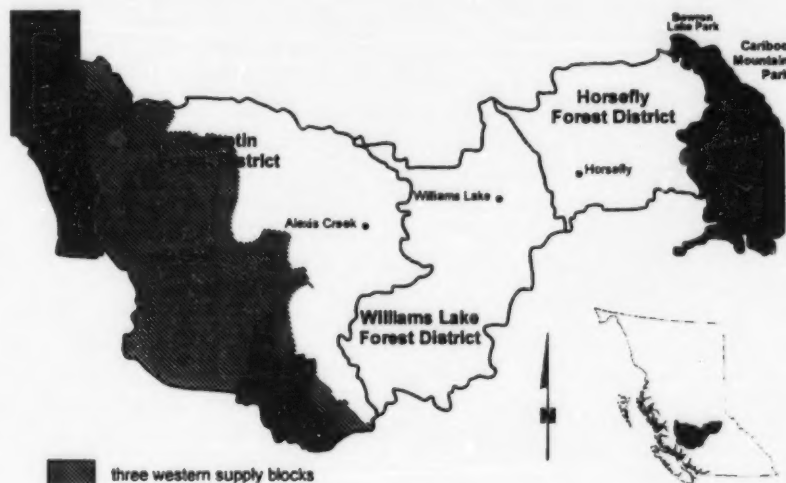
Definitions

- * **Timber Supply** - the amount of timber that is forecast to be available for harvesting over a specified time period, under a particular management regime.
- * **TSA** - an integrated resource management unit established in accordance with Section 7 of the Forest Act.
- * **TFL** - provides rights to harvest timber, and outlines responsibilities for forest management, in a particular area.
- * **mountain pine beetles** - are small insects that attack and kill mature pine trees by boring through the bark and mining the phloem—the layer between the bark and wood of a tree.

Description of the

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The Williams Lake TSA in the central interior of British Columbia is one of three TSAs in the Cariboo Forest Region. The TSA covers about 4.9 million hectares (an area about 1½ times the size of Vancouver Island) and is administered by three forest districts: Chilcotin, Horsefly and Williams Lake. Within the Chilcotin district, there is a management sub-unit called the 'three western supply blocks' where forests are generally less productive and distant from population centres.



to ensure good forest management of all forest values, including maintaining a range of biodiversity and wildlife values. Forests inside and outside of the area considered available for harvesting—the timber harvesting land base*—will help to maintain critical forest habitats for many species.

In the Williams Lake TSA, about 33 per cent of the forested area managed by the Forest Service is not considered available for timber harvesting, and provides for many environmental values. As well, parks in the

surrounding area contribute to the protection of wildlife habitat and biodiversity. Management requirements for biodiversity, scenic areas, mule deer winter range and caribou habitat are included in the analysis.

The Forest Practices Code outlines the process for identifying species at risk that require special management and for establishing wildlife habitat areas for these species. Currently, a number of species identified as at risk may be found in the Williams Lake TSA, among them the American white pelican, sandhill crane, grizzly bear, mountain caribou, and northern goshawk.

The City of Williams Lake is the largest community in the TSA, accounting for about 40 per cent of the TSA's population of about 30,100 (estimate for 2001). Other communities include Alexis Creek, Riske Creek, Big Creek, Tatla Lake, Nimpo Lake, Anahim Lake, 150 Mile House, Big Lake, Horsefly, Likely and McLeese Lake.

The natural resources

Numerous natural resources are associated with the forest land base in the Williams Lake TSA, such as forest products (timber and non-timber), forage, minerals, recreation and tourism amenities, and a variety of fishery and wildlife habitats.

As Figure 1 shows, about 64 per cent (about 3.15 million hectares) of the Williams Lake TSA is Crown-owned productive forest managed by the British Columbia Forest Service. Currently, about 67 per cent of this is considered available for harvesting.

All current forest management follows the direction set out by the Forest Practices Code. The Code is designed

* **Timber harvesting land base** – is land that is considered available for timber harvesting after accounting for environmental concerns and economic factors.

First Nations

The Williams Lake TSA is home to 10 First Nation bands belonging to the Secwepemc, Tsilhqot'in and Carrier Nations. Twelve other bands belonging to the Secwepemc, Tsilhqot'in, Carrier, St'at'imx, Coast

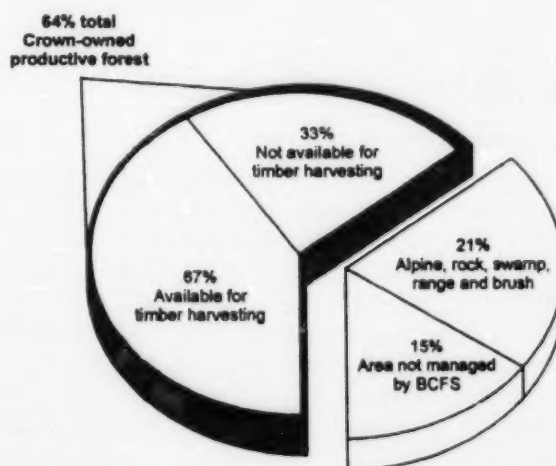


Figure 1. Area breakdown of the Williams Lake TSA, 2001

Salish and Kwakiutl Nations have asserted traditional territory within the TSA but do not have reserves in the TSA.

Traditional-use studies and archaeological overview assessments that have been carried out in the area will be considered in the upcoming allowable annual cut determination.

Land use planning

The Cariboo-Chilcotin Land Use Plan was approved by government in October 1994 and subsequently declared a higher level plan under the Forest Practices Code in January 1996. In June 1999, the higher level plan order was varied to incorporate the Cariboo-Chilcotin Land Use Plan—Integration Report. Since the last timber supply review, 11 new protected areas have been approved. The timber supply review reflects land-use planning decisions (regarding forest practices) that have been implemented. Protected areas that have received approval from government have been removed from the timber harvesting land base.

Current allowable annual cut

Following the last timber supply review, the chief forester set the current AAC for the Williams Lake TSA at 3.807 million cubic metres, effective March 31, 1997.

The current AAC includes four partitions*:

- 2.5 million cubic metres for coniferous forests in the main TSA
- 350,000 cubic metres for the three western supply blocks in the Chilcotin forest district
- 107,000 cubic metres for problem forest types within Pulpwood Agreement 16 area
- up to 850,000 cubic metres for forests damaged or killed by mountain pine beetle* infestations

Socio-economic profile

Regional economy

The forest industry in the Williams Lake TSA is an important source of employment and income for local residents. As Figure 2 shows, forestry is the largest contributor to employment with 31 per cent of the total labour force. The public sector, which includes education, health, and municipal, provincial and federal public services, is second with 27 per cent. Tourism has demonstrated significant growth and investment in recent years, and accounts for about 13 per cent of the total labour force.

* partitions - a portion of the AAC that is attributable to certain types of terrain and/or timber.

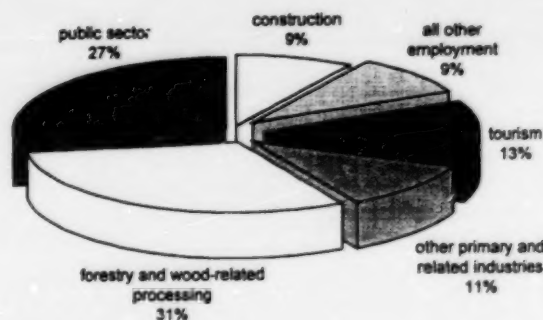


Figure 2. Total employment by basic sector, Williams Lake TSA—1996

The forest sector supports numerous other jobs in the area as a result of companies and employees purchasing goods and services from local businesses. Each 100 full-time direct forestry jobs in the Williams Lake TSA are estimated to support another 12-58 jobs, depending on the forestry activity (harvesting or timber processing). By comparison, 100 direct jobs in the tourism sector support another three to 20 jobs.

Table 2 illustrates the potential contribution of the forest industry associated with the Williams Lake TSA timber harvest to both the regional and provincial economies. Figures in this table are based on the current AAC of 3.807 million cubic metres.

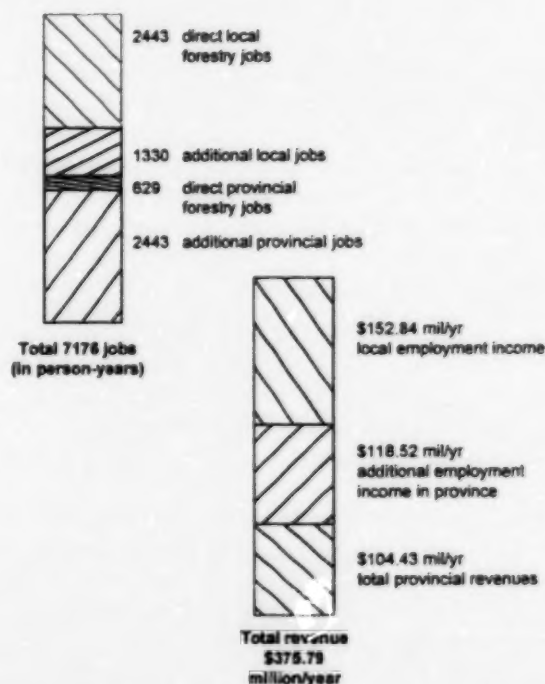


Table 2. Summary of local and provincial economic information associated with a harvest level of 3.807 million cubic metres - Williams Lake TSA, 2001

Timber supply forecasts

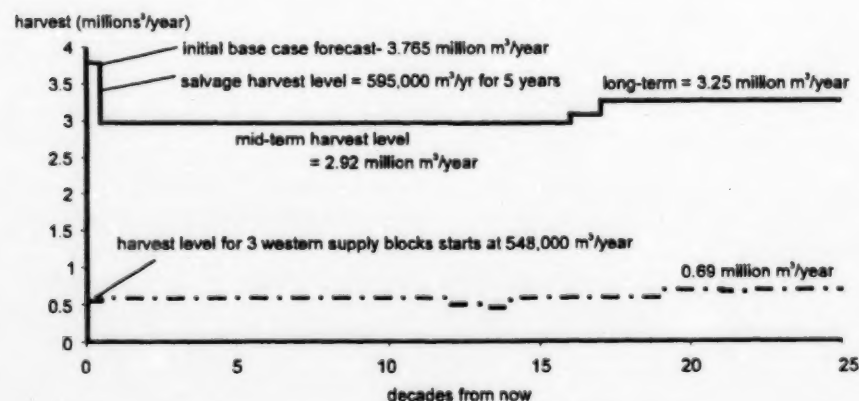
A timber supply computer model was used to forecast timber supply for the next 250 years. The base case forecast illustrates the effect of current forest management practices on timber supply, using the best available information. The base case forecast is not a recommendation for an AAC, but rather one of many sources of information the chief forester will consider when setting the AAC.

The base case forecast for the Williams Lake TSA begins at about 3.765 million cubic metres per year, which is approximately the current AAC less the volume for woodlot licences issued since the last determination.

The initial base case forecast shows that:

- for the conventional harvest in the 'main' TSA (current partition is 2.5 million cubic metres per year) the forecast is about 2.515 million cubic metres for the first five years
- for the three western supply blocks (current partition is 350,000 cubic metres per year) the forecast is about 548,000 cubic metres per year in the first five years
- for Pulpwood Agreement #16 area (current partition is 107,000 cubic metres per year) the level could be maintained for 30 years
- with the near-completion of the beetle salvage harvesting (current partition is 850,000 cubic metres per year) the forecast is about 595,000 cubic metres per year (does not include any dead trees that may still have commercial value) for the first five years.

After five years the base case forecast declines to 2.92 million cubic metres per year. In the long term, the base case increases to a steady level of 3.25 million cubic metres per year.



*** merchantability criteria** - forest characteristics such as tree species, size and volume that indicate if a forest type is economic to harvest

Because the information used in the timber supply analysis is current to the end of 1998, timber supply projections are now closer to the end of first five years as shown by the base case.

Several changes have occurred since the 1995 timber supply analysis that affect the base case timber supply forecast. Ten new parks and one protected area have been excluded from the timber harvesting land base. As well, factors to account for steep slopes, riparian areas and wildlife tree patches have been included in the base case forecast.

However, a number of factors that offset these reductions have resulted in a 26 per cent increase to the size of the timber harvesting land base compared to the last analysis. The larger timber harvesting land base is mostly due to the redefinition of merchantability criteria* and hence the inclusion of some forest types that were previously considered unmerchantable (proportionately more in the three western supply blocks). Other factors include: a lower estimated area for existing roads and trails; a redefinition of no-harvest areas in caribou habitat areas; and the inclusion of areas previously deferred from harvesting outside of the new Ts'yl-os Provincial Park (Chilko Lake area).

Recent forest inventory work concluded that volumes per hectare were over estimated. Therefore, an adjustment was applied in the base case forecast that reduced the overall volume per hectare for forests older than 60 years.

The cumulative effect of these changes is a more stable timber supply than in the 1995 analysis.

Figure 3. Base case timber supply forecast — Williams Lake TSA, 2001

Sensitivity analyses: examining uncertainty

Because forests and forest management are complex and constantly changing, timber supply analysts assess how the timber supply forecast results might be affected by uncertainties in the inventory information and management practices. These uncertainties are generally examined through what are called sensitivity analyses, which the chief forester considers in determining an AAC. These sensitivity analyses are useful for assessing how any changes in information or uncertainties and risks might affect timber supply.

Some key sensitivity analyses for the Williams Lake TSA are described below. For a complete listing, please refer to the *2001 Williams TSA Analysis Report*.

Uncertainty about the harvest level for salvaging beetle-infested pine trees

The existing partition for salvaging beetle-infested pine trees is set at an upper limit of 850,000 cubic metres per year. In 1985, this partition was originally set at 1,250,000 cubic metres per year. Since then it has been reduced to coincide with the decreasing amount of salvageable pine trees from the catastrophic mountain pine beetle infestation that started in the 1980s in the Chilcotin.

When the partition was established, the intent was to continue salvage harvesting as long as necessary to harvest the infested trees. Most of the merchantable trees from this infestation have now been salvaged.

The current mountain pine beetle infestation in the Cariboo Forest Region is being monitored to assess its implications for the Williams Lake TSA.

In the TSA, there are a total of about 283,000 hectares within the timber harvesting land base that still show the effects of the 1980's infestation. Of this area, about 70,600 hectares of low-volume pine forests are considered suitable for salvaging beetle-infested pine trees. For the salvageable area, the base case shows that 595,000 cubic metres per year could be maintained for only five years.

Uncertainty about timber merchantability

Since the last analysis, a change in merchantability limits has expanded the area now considered harvestable.

Information has been collected for the Williams Lake TSA which shows that harvesting has been occurring in forests with volumes as low as 65 cubic metres per hectare.

As merchantability involves complex considerations about the present and projections about the future, there is uncertainty about the minimum volumes used in the base case forecast. In particular, there is uncertainty about the minimum volumes for the three western supply blocks because of the economics of long haul distances to mills, ongoing planning processes and generally lower merchantability than in the main TSA. At present, there are no long-term replaceable tenures in this area that can demonstrate consistent long-term minimum volume requirements.

If the minimum volume requirements are increased from 65 cubic metres per hectare to 100 cubic metres per hectare, the initial base case level can still be achieved. However in the mid-term, there is a six per cent reduction for the overall TSA. When examined separately, the mid-term impact is a 17 per cent reduction in the three western supply blocks and a three per cent reduction in the main TSA.

Uncertainty about harvesting the oldest forests first

Typically, as older forests have been growing for many years they have the highest volumes. Therefore, in timber supply analyses, harvesting activities are often assumed to occur in the older forests first. However, in the Williams Lake TSA due to the abundance of young pine forests, existing roads, and efficient cutblock layout, harvesting actually occurs in forests of various ages.

When the analysis examined the impact to timber supply of harvesting forests of various ages, then the mid-term harvest level declined by about eight per cent, and the long term declined by about 16 per cent.

Uncertainty about site productivity

The results of provincial studies suggest that the future productivity of sites currently occupied by old-growth forests may be underestimated. The research shows that the measured productivity of existing second-growth forests is higher than the productivity estimates using measurements from old-growth forests growing on ecologically similar sites. These results are based on the

maximum potential site productivity that might be achieved under ideal conditions. However, in the field, regeneration and subsequent growth does not always occur under ideal conditions due to factors such as competition from brush or overstocking. Therefore, some forests may not reach the potential productivity suggested by research.

The results of the studies only apply to forests older than 140 years, which make up about 20 per cent of the timber harvesting land base in the Williams Lake TSA. A sensitivity analysis examined the impact to timber supply if site productivity is higher for these stands. The results show that the mid-term timber supply could be 10 per cent higher and the long-term timber supply could be as much as 26 per cent higher than currently estimated in the base case.

Combined influence of uncertainties:

To provide some insight into the possible interaction of some of these uncertainties, a sensitivity analysis examined the impact of four factors:

- timber merchantability was set at a minimum of 100 cubic metres per hectare
- more randomly selected harvest ages, with a priority to forests over 100 years
- site productivity estimates were increased on a portion of forests older than 140 years of age
- natural disturbances were applied to forested areas outside the timber harvesting land base so they did not age indefinitely

The combined effect of these uncertainties results in a mid-term level of 2.65 million cubic metres per year compared to the base case level of 2.92 million cubic metres per year. These results show that the impact to timber supply is less when the factors are combined than when examined separately.

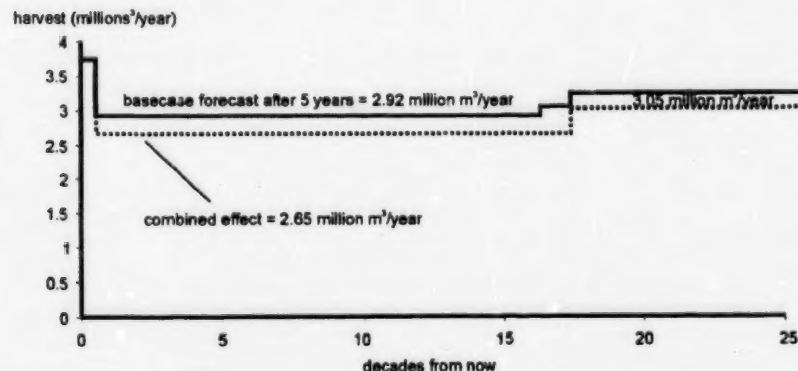


Figure 4. Combined impact of four uncertainties on base case timber supply forecast — Williams Lake TSA, 2001

Innovative Forestry Practices Agreements

In June 1997, Lignum Ltd. obtained an innovative forestry practices agreement (IFPA) within the Cariboo Forest Region that covers portions of the Williams Lake TSA. A forestry plan was signed in June 2000, which outlines the innovative forestry practices to be undertaken.

The agreement allows the holder to make a request to the Forest Service regional manager that the allowable annual cut associated with their replaceable forest licence(s) be increased based on the innovative forestry practices. The agreement area is included in the timber harvesting land base, however, the process for reviewing AACs for forest licences linked to the IFPA is not part of the Timber Supply Review process.

Community implications of changes in the AAC

The implication of changes in the AAC for local communities is an important consideration in the Timber Supply Review. Since the Williams Lake timber harvest provides more than 30 per cent of the total employment in the TSA, changes to the timber supply would have a significant impact on the overall economic trends of the region.

The base case harvest forecast for the Williams Lake TSA suggests that the harvest level of 850,000 cubic metres per year for salvage harvesting is likely to be reduced or eliminated. If this occurs, then a proportional reduction in the number of jobs is projected, however, the impact to government revenue will likely be less as salvaged timber generates lower revenues. In the neighbouring Quesnel TSA, the AAC was increased in June 2001 to help battle the recent mountain pine beetle epidemic.

This increased harvesting and processing may offset some reductions projected for the Williams Lake TSA. Apart from the salvage harvest level, the timber supply appears to be stable in the mid term and even increases in the long term.

The average actual harvest level from 1996 to 2000 was about 3,696,500 cubic metres.

Your input is needed

Establishing the AAC is an important decision that requires informed and thoughtful public input. Feedback is welcomed on any aspect of this discussion paper, the *2001 Williams Lake TSA Analysis Report* and other issues related to the timber supply in the Williams Lake TSA. Forest Service staff would be pleased to answer questions or discuss concerns that would help you prepare your response. Please send your comments to the forest district or regional manager at the address below. Your comments will be accepted until **October 23, 2001**.

You may identify yourself on the response if you wish. If you do, you are reminded that responses will be subject to the *Freedom of Information and Protection of Privacy Act* and may be made public. If the responses are made public, personal identifiers will be removed before the responses are released.

A summary of public comments will be attached to the AAC rationale and will be available from the district office when the chief forester's AAC determination is announced.

For more information contact Eric Johansen (250) 398-4345 at the Williams Lake Forest Region. Send your comments by fax: (250) 398-4759 or electronically to: Eric.Johansen@gems9.gov.bc.ca or send your written comments by regular mail to:

District Manager
B.C. Forest Service
Chilcotin Forest District
Box 65,
Alexis Creek, B.C. V0L 1A0

District Manager
B.C. Forest Service
Horsefly Forest District
Box 69,
Horsefly, B.C. V0L 1L0

District Manager
B.C. Forest Service
Williams Lake Forest District
925 North 2nd Avenue,
Williams Lake, B.C. V2G 4P7

Regional Manager
B.C. Forest Service
Cariboo Forest Region
640 Borland Street
Williams Lake, B.C. V2G 4T1

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Background Information Regarding TSR

The Chief Forester's Responsibility

Determining the AACs for public forest lands in British Columbia is the responsibility of the province's chief forester. In this lengthy and complex process, the chief forester considers technical reports, analyses and public input, as well as government's social and economic objectives.

This responsibility is required by legislation in the *Forest Act*, Section 8. It states that the chief forester shall specifically consider the following factors:

1. The rate of timber production that may be sustained from the area, taking into account:
 - the composition of the forest and its expected rate of growth
 - the time that it will take the forest to become re-established
 - silviculture treatments, including reforestation
 - standards of timber utilization
 - constraints on the amount of timber that may be produced due to use of the forest for other purposes.
2. The short- and long-term implications to the province of alternative rates of timber harvesting from the area.
3. The nature, production capabilities and timber requirements of established and proposed processing facilities.
4. The economic and social objectives of the Crown for the area, region and province—as expressed by the minister of forests.
5. Abnormal insect or disease infestations, and major salvage programs planned for the timber on the area.

Some of these factors can be measured and analyzed—others cannot. Ultimately, the chief forester's determination is an independent professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not directed by the minister of forests when determining AACs. In these determinations, the chief forester considers relevant information from all sources.

